

Search	Most Recent Queries	Time	Resu
#52 Search #49 and phosphinothricin		11:04:00	
#51 Search #49 and sulfo*		11:03:39	
#50 Search #49 and phosph*		11:03:29	
#49 Search #48 and sulfoximine		11:03:15	1
#48 Related Articles for PubMed (Select 10224282)		11:02:24	4
#46 PubMed Citations for PubChem Substance (Select 638212)		11:02:10	
#45 PubMed Citations for PubChem Substance (Select 638213)		11:02:02	
#44 PubMed Citations for PubChem Substance (Select 638214)		11:01:57	
#40 PubMed Citations for PubChem Substance (Select 638211)		11:00:04	
#33 PubMed Citations for PubChem Compound (Select 480050)		10:56:31	
#32 PubMed Citations for PubChem Substance (Select 638215)		10:56:17	
#23 Related Articles for PubMed (Select 6113985)		10:53:33	1
#22 Search Experientia[Jour] AND 461[page] AND 1981[pdat]		10:49:48	
#21 Search "Lejczak B"[Author]		10:48:31	2

=> fil reg

FILE 'REGISTRY' ENTERED AT 08:56:51 ON 20 JUL 2006

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 18 JUL 2006 HIGHEST RN 894196-03-3

DICTIONARY FILE UPDATES: 18 JUL 2006 HIGHEST RN 894196-03-3

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 6, 2006

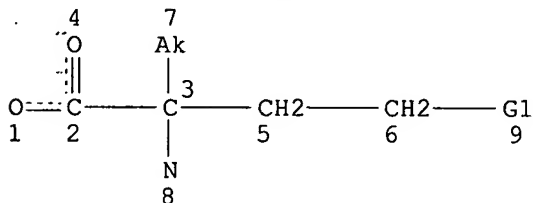
Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

=> d sta que l8

L1 STR



VAR G1=S/P

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

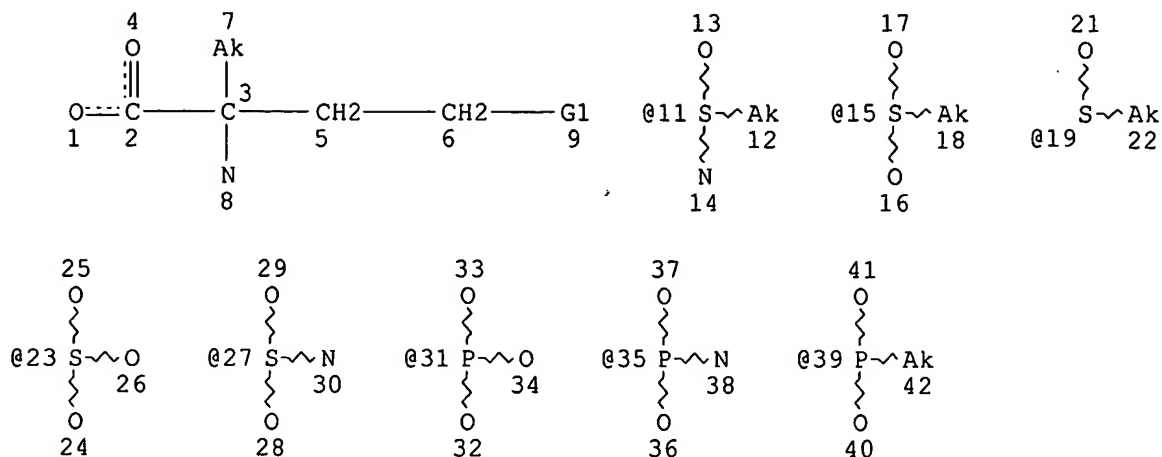
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 9

STEREO ATTRIBUTES: NONE

L3 311 SEA FILE=REGISTRY SSS FUL L1

L6 STR



VAR G1=11/15/19/23/27/31/35/39

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 40

STEREO ATTRIBUTES: NONE

L8 28 SEA FILE=REGISTRY SUB=L3 CSS FUL L6

100.0% PROCESSED 113 ITERATIONS

SEARCH TIME: 00.00.03

28 ANSWERS

=> d ide can tot 18

L8 ANSWER 1 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN

RN 858741-14-7 REGISTRY

ED Entered STN: 07 Aug 2005

CN INDEX NAME NOT YET ASSIGNED

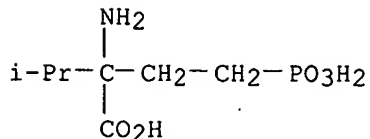
FS 3D CONCORD

MF C7 H16 N O5 P

SR Chemical Library

Supplier: Aurora Fine Chemicals

LC STN Files: CHEMCATS

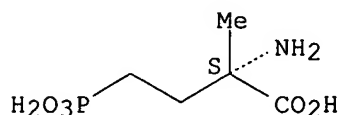


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

jan delaval - 20 july 2006

L8 ANSWER 2 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 844864-14-8 REGISTRY
ED Entered STN: 10 Mar 2005
CN L-Isovaline, 4-phosphono-, hydrochloride (9CI) (CA INDEX NAME)
OTHER NAMES:
CN (S)-2-Amino-2-methyl-4-phosphonobutanoic acid hydrochloride
FS STEREOSEARCH
MF C5 H12 N O5 P . Cl H
SR CA
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS
CRN (157381-42-5)

Absolute stereochemistry. Rotation (+).



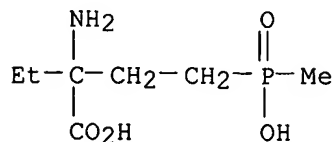
● HCl

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 142:240508

L8 ANSWER 3 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 743387-50-0 REGISTRY
ED Entered STN: 12 Sep 2004
CN Butanoic acid, 2-amino-2-ethyl-4-(hydroxymethylphosphinyl)- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C7 H16 N O4 P
CI COM
SR CA

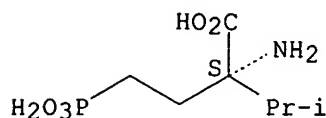


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L8 ANSWER 4 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 258284-99-0 REGISTRY
ED Entered STN: 06 Mar 2000
CN L-Valine, 2-(2-phosphonoethyl)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C7 H16 N O5 P

SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.

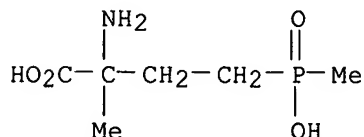


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 132:151895

L8 ANSWER 5 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 220288-10-8 REGISTRY
ED Entered STN: 09 Mar 1999
CN Isovaline, 4-(hydroxymethylphosphinyl)-, ammonium salt (9CI) (CA INDEX NAME)
MF C6 H14 N O4 P . x H3 N
SR CA
LC STN Files: CA, CAPLUS, CASREACT, USPATFULL
CRN (65482-86-2)

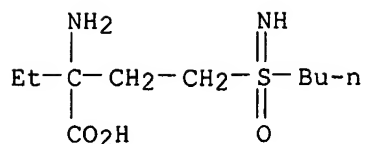


●x NH3

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 130:153794

L8 ANSWER 6 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 204438-84-6 REGISTRY
ED Entered STN: 23 Apr 1998
CN Butanoic acid, 2-amino-4-(S-butylsulfonimidoyl)-2-ethyl- (9CI) (CA INDEX NAME)
FS 3D CONCORD
MF C10 H22 N2 O3 S
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL



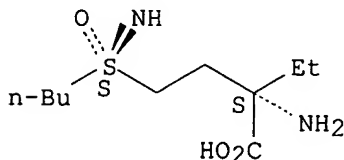
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 128:213410

L8 ANSWER 7 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 204438-79-9 REGISTRY
ED Entered STN: 23 Apr 1998
CN Butanoic acid, 2-amino-4-(S-butylsulfonimidoyl)-2-ethyl-, [S-(R*,R*)]-
(9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C10 H22 N2 O3 S
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL

Absolute stereochemistry.



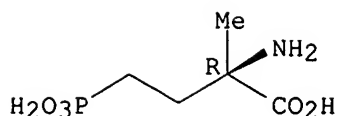
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 128:213410

L8 ANSWER 8 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 171483-43-5 REGISTRY
ED Entered STN: 19 Dec 1995
CN D-Isovaline, 4-phosphono- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN (R)-2-Amino-2-methyl-4-phosphonobutanoic acid
FS STEREOSEARCH
MF C5 H12 N O5 P
SR CA
LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS

Absolute stereochemistry. Rotation (-).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

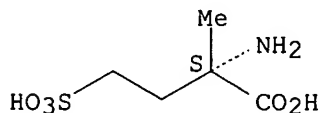
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 142:240508

REFERENCE 2: 124:30404

L8 ANSWER 9 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 171228-34-5 REGISTRY
ED Entered STN: 12 Dec 1995
CN L-Isovaline, 4-sulfo- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C5 H11 N O5 S
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

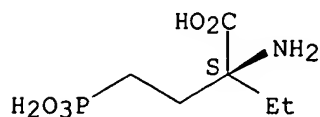
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 136:318765

REFERENCE 2: 124:30404

L8 ANSWER 10 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 170984-73-3 REGISTRY
ED Entered STN: 06 Dec 1995
CN Butanoic acid, 2-amino-2-ethyl-4-phosphono-, (S)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H14 N O5 P
SR CA
LC STN Files: CA, CAPLUS

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 124:30404

L8 ANSWER 11 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN

RN 157381-42-5 REGISTRY

ED Entered STN: 01 Sep 1994

CN L-Isovaline, 4-phosphono- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN α -Methyl-L-AP 4

CN 4-Phosphono-L-isovaline

FS STEREOSEARCH

DR 181361-62-6

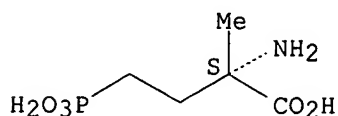
MF C5 H12 N O5 P

CI COM

SR CA

LC STN Files: CA, CAPLUS, CASREACT, CHEMCATS, CSCHEM, TOXCENTER, USPAT2, USPATFULL

Absolute stereochemistry. Rotation (+).



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

39 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
39 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 142:85952

REFERENCE 2: 140:23256

REFERENCE 3: 140:22628

REFERENCE 4: 138:130580

REFERENCE 5: 137:363255

REFERENCE 6: 136:318765

REFERENCE 7: 135:376738

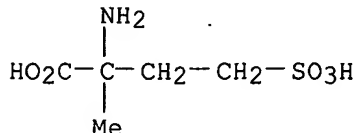
REFERENCE 8: 135:352635

REFERENCE 9: 135:55950

REFERENCE 10: 134:193694

L8 ANSWER 12 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN

RN 155330-54-4 REGISTRY
 ED Entered STN: 26 May 1994
 CN Isovaline, 4-sulfo- (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN DL-Isovaline, 4-sulfo-
 FS 3D CONCORD
 MF C5 H11 N O5 S
 SR CA
 LC STN Files: CA, CAPLUS



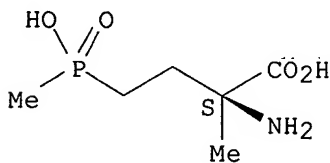
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 121:9939

L8 ANSWER 13 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 141609-98-5 REGISTRY
 ED Entered STN: 05 Jun 1992
 CN L-Isovaline, 4-(hydroxymethylphosphinyl)- (9CI) (CA INDEX NAME)
 FS STEREOSEARCH
 MF C6 H14 N O4 P
 SR CA
 LC STN Files: BEILSTEIN*, CA, CAPLUS
 (*File contains numerically searchable property data)

Absolute stereochemistry.



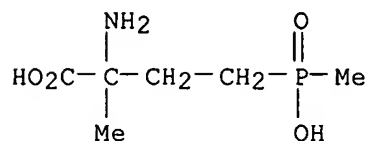
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 117:106229

L8 ANSWER 14 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 115730-43-3 REGISTRY
 ED Entered STN: 13 Aug 1988
 CN Isovaline, 4-(hydroxymethylphosphinyl)-, monoammonium salt (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:

CN DL-Isovaline, 4-(hydroxymethylphosphinyl)-, monoammonium salt
 MF C6 H14 N O4 P . H3 N
 SR CA
 LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
 (*File contains numerically searchable property data)
 CRN (65482-86-2)



● NH₃

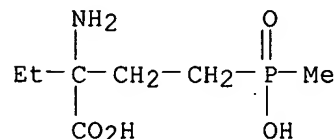
3 REFERENCES IN FILE CA (1907 TO DATE)
 3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 112:32528

REFERENCE 2: 110:150325

REFERENCE 3: 109:110882

L8 ANSWER 15 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 115651-45-1 REGISTRY
 ED Entered STN: 06 Aug 1988
 CN Butanoic acid, 2-amino-2-ethyl-4-(hydroxymethylphosphinyl)-, monosodium salt (9CI) (CA INDEX NAME)
 OTHER CA INDEX NAMES:
 CN Butanoic acid, 2-amino-2-ethyl-4-(hydroxymethylphosphinyl)-, monosodium salt, (±)-
 MF C7 H16 N O4 P . Na
 SR CA
 LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
 (*File contains numerically searchable property data)
 CRN (743387-50-0)



● Na

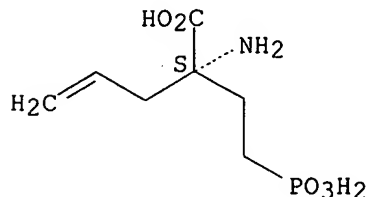
1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 109:110882

L8 ANSWER 16 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN

RN 104739-23-3 REGISTRY
 ED Entered STN: 18 Oct 1986
 CN 4-Pentenoic acid, 2-amino-2-(2-phosphonoethyl)-, (S)- (9CI) (CA INDEX NAME)
 FS STEREOSEARCH
 MF C7 H14 N O5 P
 SR CA
 LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT
 (*File contains numerically searchable property data)

Absolute stereochemistry.



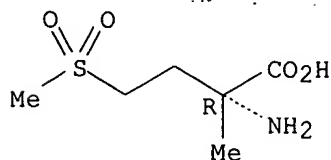
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 106:5390

L8 ANSWER 17 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 95833-68-4 REGISTRY
 ED Entered STN: 13 Apr 1985
 CN D-Isovaline, 4-(methylsulfonyl)- (9CI) (CA INDEX NAME)
 FS STEREOSEARCH
 MF C6 H13 N O4 S
 LC STN Files: BEILSTEIN*, CA, CAPLUS
 (*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

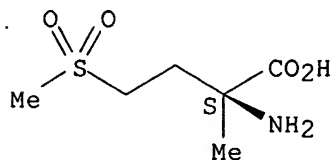
1 REFERENCES IN FILE CA (1907 TO DATE)
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 102:178450

L8 ANSWER 18 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 95833-67-3 REGISTRY
 ED Entered STN: 13 Apr 1985
 CN L-Isovaline, 4-(methylsulfonyl)- (9CI) (CA INDEX NAME)

FS STEREOSEARCH
MF C6 H13 N O4 S
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

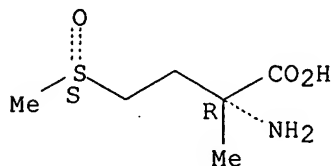
2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 102:178450

REFERENCE 2: 50:73727

L8 ANSWER 19 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 95833-66-2 REGISTRY
ED Entered STN: 13 Apr 1985
CN D-Isovaline, 4-(methylsulfinyl)-, (S)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H13 N O3 S
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Absolute stereochemistry.



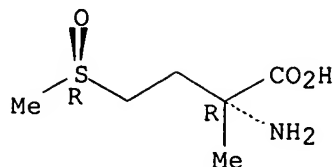
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 102:178450

L8 ANSWER 20 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 95833-65-1 REGISTRY
ED Entered STN: 13 Apr 1985
CN D-Isovaline, 4-(methylsulfinyl)-, (R)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H13 N O3 S
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Absolute stereochemistry.



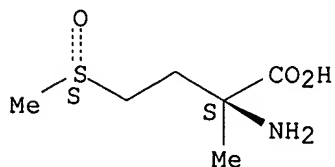
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 102:178450

L8 ANSWER 21 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 95833-64-0 REGISTRY
ED Entered STN: 13 Apr 1985
CN L-Isovaline, 4-(methylsulfinyl)-, (S)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H13 N O3 S
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Absolute stereochemistry.



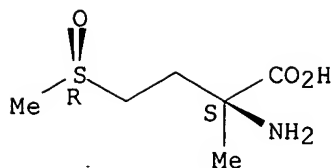
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 102:178450

L8 ANSWER 22 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 95833-63-9 REGISTRY
ED Entered STN: 13 Apr 1985
CN L-Isovaline, 4-(methylsulfinyl)-, (R)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C6 H13 N O3 S
LC STN Files: BEILSTEIN*, CA, CAPLUS
(*File contains numerically searchable property data)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 102:178450

L8 ANSWER 23 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN

RN 78405-44-4 REGISTRY

ED Entered STN: 16 Nov 1984

CN Isovaline, 4-phosphono- (9CI) (CA INDEX NAME)

OTHER CA INDEX NAMES:

CN DL-Isovaline, 4-phosphono-

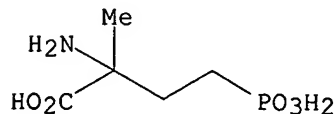
OTHER NAMES:

CN 2-Amino-2-methyl-4-phosphonobutanoic acid

DR 75787-84-7

MF C5 H12 N O5 P

LC STN Files: BEILSTEIN*, CA, CAPLUS, CASREACT, CHEMCATS, TOXCENTER
(*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 142:240508

REFERENCE 2: 133:69122

REFERENCE 3: 117:184255

REFERENCE 4: 102:198188

REFERENCE 5: 102:197823

REFERENCE 6: 95:57044

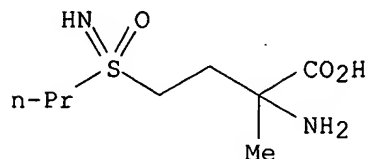
REFERENCE 7: 94:140

L8 ANSWER 24 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN

RN 70056-05-2 REGISTRY

ED Entered STN: 16 Nov 1984

CN Isovaline, 4-(S-propylsulfonimidoyl)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN DL-Isovaline, 4-(S-propylsulfonimidoyl)-
OTHER NAMES:
CN α -Methyl-DL-prothionine-SR-sulfoximine
MF C8 H18 N2 O3 S
LC STN Files: CA, CAPLUS

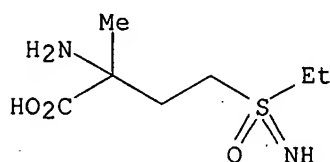


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 90:198299

L8 ANSWER 25 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 70056-03-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN Isovaline, 4-(S-ethylsulfonimidoyl)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN DL-Isovaline, 4-(S-ethylsulfonimidoyl)-
MF C7 H16 N2 O3 S
LC STN Files: CA, CAPLUS



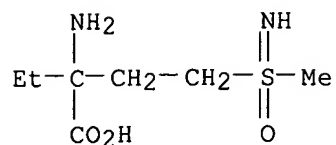
PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 90:198299

L8 ANSWER 26 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
RN 66735-68-0 REGISTRY
ED Entered STN: 16 Nov 1984
CN Butanoic acid, 2-amino-2-ethyl-4-(S-methylsulfonimidoyl)- (9CI) (CA INDEX NAME)
OTHER NAMES:
CN α -Ethyl-DL-methionine-SR-sulfoximine
FS 3D CONCORD
DR 113282-47-6

MF C7 H16 N2 O3 S
 LC STN Files: CA, CAPLUS, MEDLINE, TOXCENTER, USPATFULL



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

4 REFERENCES IN FILE CA (1907 TO DATE)
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

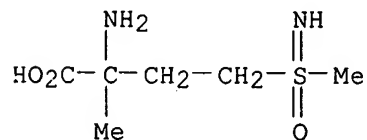
REFERENCE 1: 141:12262

REFERENCE 2: 108:132274

REFERENCE 3: 90:198299

REFERENCE 4: 89:100916

L8 ANSWER 27 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 66735-67-9 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Isovaline, 4-(S-methylsulfonylimidoyl)- (9CI) (CA INDEX NAME)
 OTHER NAMES:
 CN α-Methyl-DL-methionine (SR)-sulfoximine
 FS 3D CONCORD
 MF C6 H14 N2 O3 S
 LC STN Files: BEILSTEIN*, CA, CAPLUS, TOXCENTER, USPATFULL
 (*File contains numerically searchable property data)



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5 REFERENCES IN FILE CA (1907 TO DATE)
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REFERENCE 1: 141:12262

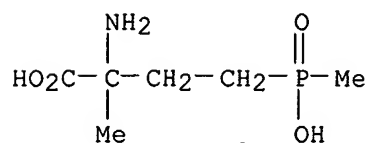
REFERENCE 2: 114:38443

REFERENCE 3: 90:198299

REFERENCE 4: 89:100916

REFERENCE 5: 50:73727

L8 ANSWER 28 OF 28 REGISTRY COPYRIGHT 2006 ACS on STN
 RN 65482-86-2 REGISTRY
 ED Entered STN: 16 Nov 1984
 CN Isovaline, 4-(hydroxymethylphosphinyl)- (9CI) (CA INDEX NAME)
 FS 3D CONCORD
 DR 78405-45-5
 MF C6 H14 N O4 P
 CI COM
 LC STN Files: BEILSTEIN*, CA, CAPLUS, IFICDB, IFIPAT, IFIUDB, TOXCENTER,
 USPATFULL
 (*File contains numerically searchable property data)



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6 REFERENCES IN FILE CA (1907 TO DATE)
 6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 104:218953
 REFERENCE 2: 95:57044
 REFERENCE 3: 94:151895
 REFERENCE 4: 93:8479
 REFERENCE 5: 89:141899
 REFERENCE 6: 88:70494

=> d his 18-

(FILE 'REGISTRY' ENTERED AT 08:43:50 ON 20 JUL 2006)
 L8 28 S L6 CSS FUL SUB=L3
 SAV L8 ISSAC715A/A

FILE 'HCAOLD' ENTERED AT 08:48:16 ON 20 JUL 2006
 L9 0 S L8

FILE 'HCAPLUS' ENTERED AT 08:48:21 ON 20 JUL 2006
 L10 66 S L8
 L11 1 S US20040157802/PN OR (US2003-715679# OR WO2003-US36705 OR US20
 E HORWITZ M/AU
 L12 128 S E3-E6,E12,E13
 E HARTH G/AU
 L13 54 S E3,E4,E7,E8
 E GRIFFITH O/AU
 L14 176 S E3,E16,E21,E24
 L15 5 S L10 AND L11-L14

FILE 'REGISTRY' ENTERED AT 08:50:50 ON 20 JUL 2006

jan delaval - 20 july 2006

L16 1 S 9023-70-5

FILE 'HCAPLUS' ENTERED AT 08:51:55 ON 20 JUL 2006

L17 6221 S L16
L18 7476 S GLUTAMINE() (SYNTHETASE OR SYNTHASE)
L19 67 S GLUTAMATE() (AMMONIA LIGASE OR ETHYLAMINE LIGASE)
L20 0 S GLUTAMYLHYDROXAMIC () (SYNTHETASE OR SYNTHASE)
L21 7 S L10 AND L17-L19
L22 9 S L15,L21
L23 11 S L8(L) (THU OR PAC OR PKT OR DMA)/RL
L24 29 S L10 AND (PHARMACEUT? OR PHARMACOL? OR BIOMOL? OR PATHOL?)/SC,
L25 64 S L10 AND (PY<=2002 OR PRY<=2002 OR AY<=2002)
L26 9 S L22 AND L25
L27 10 S L23 AND L25
L28 28 S L24 AND L25
E MYCOBACTERIUM/CT
L29 27923 S E3+OLD,NT
L30 1 S L29 AND L25
L31 9 S L26,L30
L32 2 S L27,L28 AND L31
L33 9 S L31,L32
L34 26 S L27,L28 NOT L33

FILE 'REGISTRY' ENTERED AT 08:56:51 ON 20 JUL 2006

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L16 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2006 ACS on STN

RN 9023-70-5 REGISTRY

ED Entered STN: 16 Nov 1984

CN Synthetase, glutamine (9CI) (CA INDEX NAME)

OTHER NAMES:

CN E.C. 6.3.1.2

CN Glutamate ammonia ligase

CN Glutamate-ethylamine ligase

CN Glutamine synthase

CN Glutamine synthetase

CN Glutamylhydroxamic synthetase

CN L-Glutamine synthetase

MF Unspecified

CI MAN

LC STN Files: AGRICOLA, ANABSTR, BIOSIS, BIOTECHNO, CA, CABA, CAPLUS,
CASREACT, CBNB, CHEMINFORMRX, CIN, CSCHEM, CSNB, EMBASE, IFICDB, IFIPAT,
IFIUDB, IPA, PROMT, TOXCENTER, USPAT2, USPATFULL

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

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6215 REFERENCES IN FILE CA (1907 TO DATE)

59 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA

6220 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 145:61696

REFERENCE 2: 145:59753

REFERENCE 3: 145:58859

REFERENCE 4: 145:58856

jan delaval - 20 july 2006

REFERENCE 5: 145:56770
REFERENCE 6: 145:45231
REFERENCE 7: 145:45004
REFERENCE 8: 145:42731
REFERENCE 9: 145:41453
REFERENCE 10: 145:40851

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 08:57:21 ON 20 JUL 2006

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FILE COVERS 1907 - 20 Jul 2006 VOL 145 ISS 4

FILE LAST UPDATED: 19 Jul 2006 (20060719/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all hitstr tot 133

L33 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:452975 HCAPLUS

DN 141:12262

ED Entered STN: 04 Jun 2004

TI Anti-microbial agents derived from methionine sulfoximine analogues and use for treating mycobacterial infections

IN Harth, Gunter; Griffith, Owen W.; Horwitz, Marcus A.

PA Regents of the University of California, USA

SO PCT Int. Appl., 40 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM A61K

CC 63-5 (Pharmaceuticals)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2004045539	A2	20040603	WO 2003-US36705	20031117 <--

jan delaval - 20 july 2006

WO 2004045539 C2 20040805
 WO 2004045539 A3 20041111
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
 PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,
 UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IT, LU, MC, NL, PT, RO, SE, SI, SK, TR
 AU 2003295579 A1 20040615 AU 2003-295579 20031117 <--
 US 2004157802 A1 20040812 US 2003-715679 20031117 <--
 US 2006142251 A1 20060629 US 2005-534660 20051128 <--
 PRAI US 2002-426502P P 20021115 <--
 US 2002-430407P P 20021202 <--
 WO 2003-US36705 W 20031117 <--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004045539	ICM	A61K
	IPCI	A61K [ICM,7]
	IPCR	A61K0031-185 [I,C*]; A61K0031-196 [I,A]; A61K0031-34 [I,A]; A61K0031-34 [I,C*]; A61K0031-44 [I,A]; A61K0031-44 [I,C*]
	ECLA	A61K031/196; A61K031/34; A61K031/44; A61K031/196+M; A61K031/34+M; A61K031/375+M; A61K031/44+M
AU 2003295579	IPCI	A61K0031-195 [ICM,7]; A61K0031-185 [ICM,7,C*]; A61K0031-34 [ICS,7]; A61K0031-44 [ICS,7]
	IPCR	A61K0031-185 [I,C*]; A61K0031-196 [I,A]; A61K0031-34 [I,A]; A61K0031-34 [I,C*]; A61K0031-44 [I,A]; A61K0031-44 [I,C*]
US 2004157802	IPCI	A61K0031-66 [ICM,7]; A61K0031-185 [ICS,7]; A61K0031-198 [ICS,7]
	IPCR	A61K0031-185 [I,A]; A61K0031-185 [I,C*]; A61K0031-198 [I,A]; A61K0031-66 [I,A]; A61K0031-66 [I,C*]
	NCL	514/114.000
US 2006142251	IPCI	A61K0031-198 [I,A]; A61K0031-185 [I,C*]; A61K0031-66 [I,A]
	NCL	514/114.000; 514/562.000

OS MARPAT 141:12262

AB Novel antimicrobial compns. containing analogs of L-methionine-SR-sulfoximine (MSO) that are effective in treating intracellular pathogen infections are provided. Specifically, the compns. provided are MSO analogs having superior antimicrobial activity with significantly less toxicity as compared to MSO. These MSO analogs are suitable for use in treating infection in animals including primates, cows, pigs, horses, rabbits, mice, rats, cats, and dogs. Moreover, the MSO analogs are ideally suited for treating infections caused by the genus Mycobacterium. Addnl., methods for using the novel MSO analogs are also provided.

ST antimicrobial agent mycobacterium methionine sulfoximine analog

IT Bos taurus

Canis familiaris

Equus caballus

Felis catus

Human

Mammalia

Monkey

Mycobacterium avium

Mycobacterium bovis

Mycobacterium tuberculosis

Oryctolagus cuniculus
 Rodentia
 Sus scrofa domestica
 (anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT Antibacterial agents
 (anti-mycobacterial; anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT Infection
 (bacterial, mycobacterial, treatment of; anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT **Mycobacterium**
 (infection, treatment of; anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT 7732-18-5, Water, uses
 RL: NUU (Other use, unclassified); USES (Uses)
 (anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT 74-93-1, Methane thiol, reactions 143-33-9, Sodium cyanide 1066-33-7, Ammonium bicarbonate 1629-58-9, Ethyl vinyl ketone 5925-75-7, 26628-22-8, Sodium azide
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

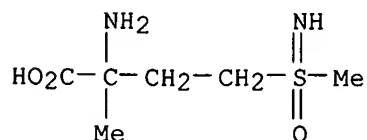
IT 66735-71-5P, α -Ethyl-DL-methionine
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT 50-81-7, Ascorbic acid, biological studies 54-85-3, Isoniazid 1982-67-8D, Methionine sulfoximine, analogs 15985-39-4
 66735-67-9 66735-68-0
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

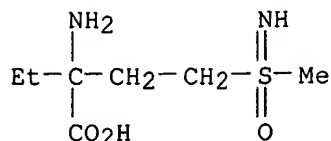
IT 9023-70-5, Glutamine synthetase ()
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (inhibitor; anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

IT 66735-67-9 66735-68-0
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (anti-microbial agents derived from methionine sulfoximine analogs and use for treating mycobacterial infections)

RN 66735-67-9 HCAPLUS
 CN Isovaline, 4-(S-methylsulfonimidoyl)- (9CI) (CA INDEX NAME)



RN 66735-68-0 HCAPLUS
 CN Butanoic acid, 2-amino-2-ethyl-4-(S-methylsulfonimidoyl)- (9CI) (CA INDEX NAME)



IT 9023-70-5, Glutamine synthetase (
 RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
 (inhibitor; anti-microbial agents derived from methionine sulfoximine
 analogs and use for treating mycobacterial infections)
 RN 9023-70-5 HCAPLUS
 CN Synthetase, glutamine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1998:163492 HCAPLUS
 DN 128:213410
 ED Entered STN: 19 Mar 1998
 TI Modulators of nitrosative and oxidative stress for the treatment of
 disease
 IN Stamler, Jonathan S.; Griffith, Owen W.
 PA Duke University, USA; Medical College of Wisconsin Research Foundation,
 Inc.
 SO PCT Int. Appl., 159 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 IC ICM A61N0001-362
 ICS G01N0031-00; G01N0033-03; G01N0033-26; G01N0033-00; G01N0033-574;
 G01N0033-554; G01N0033-569; A61K0039-395; A61K0039-40; A61K0039-42;
 A61K0039-44
 CC 1-12 (Pharmacology)
 Section cross-reference(s): 23

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9808566	A1	19980305	WO 1997-US13876	19970813 <--
	W: AU, CA, JP				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 6057367	A	20000502	US 1997-852490	19970507 <--
	CA 2262708	AA	19980305	CA 1997-2262708	19970813 <--
	AU 9740542	A1	19980319	AU 1997-40542	19970813 <--
	EP 963219	A1	19991215	EP 1997-938149	19970813 <--
	EP 963219	B1	20051102		
	R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
	EP 1595573	A2	20051116	EP 2005-18035	19970813 <--
	EP 1595573	A3	20051214		
	R: CH, DE, ES, FR, GB, IT, LI, NL, SE				
	EP 1616564	A2	20060118	EP 2005-22847	19970813 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	US 6180824	B1	20010130	US 1999-361167	19990727 <--
	US 6359004	B1	20020319	US 2000-690989	20001018 <--
	US 2003096870	A1	20030522	US 2001-13455	20011213 <--
	US 6608110	B2	20030819		
	US 2003207815	A1	20031106	US 2003-417238	20030417 <--
	US 7022737	B2	20060404		
PRAI	US 1996-25819P	P	19960830	<--	

US 1997-852490	A	19970507	<--
EP 1997-938149	A3	19970813	<--
WO 1997-US13876	W	19970813	<--
US 1999-361167	A1	19990727	<--
US 2000-690989	A1	20001018	<--
US 2001-13455	A3	20011213	<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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	ICS	G01N0031-00; G01N0033-03; G01N0033-26; G01N0033-00; G01N0033-574; G01N0033-554; G01N0033-569; A61K0039-395; A61K0039-40; A61K0039-42; A61K0039-44
	IPCI	A61N0001-362 [ICM,6]; G01N0031-00 [ICS,6]; G01N0033-03 [ICS,6]; G01N0033-02 [ICS,6,C*]; G01N0033-26 [ICS,6]; G01N0033-00 [ICS,6]; G01N0033-574 [ICS,6]; G01N0033-554 [ICS,6]; G01N0033-569 [ICS,6]; A61K0039-395 [ICS,6]; A61K0039-40 [ICS,6]; A61K0039-42 [ICS,6]; A61K0039-44 [ICS,6]
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US 6057367	ECLA	A61K031/00; A61K031/195; A61K031/255; C07C381/10
	IPCI	A61K0031-195 [ICM,7]; A61K0031-185 [ICM,7,C*]
	IPCR	A61K0031-00 [I,A]; A61K0031-00 [I,C*]; A61K0031-185 [I,C*]; A61K0031-195 [I,A]; A61K0031-21 [I,C*]; A61K0031-255 [I,A]; C07C0381-00 [I,C*]; C07C0381-10 [I,A]
	NCL	514/561.000; 514/562.000
CA 2262708	ECLA	A61K031/00; A61K031/195; A61K031/255; C07C381/10
	IPCI	C07C0381-10 [ICM,6]; C07C0381-00 [ICM,6,C*]; A61K0045-00 [ICS,6]; A61K0048-00 [ICS,6]; A61K0038-02 [ICS,6]; A61K0038-06 [ICS,6]; A61K0031-19 [ICS,6]; A61K0031-185 [ICS,6,C*]; A61K0038-19 [ICS,6]; A61K0031-70 [ICS,6]
	IPCR	A61K0031-00 [I,A]; A61K0031-00 [I,C*]; A61K0031-185 [I,C*]; A61K0031-195 [I,A]; A61K0031-21 [I,C*]; A61K0031-255 [I,A]; C07C0381-00 [I,C*]; C07C0381-10 [I,A]
AU 9740542	ECLA	A61K031/00; A61K031/195; A61K031/255; C07C381/10
	IPCI	A61N0001-362 [ICM,6]; G01N0031-00 [ICS,6]; G01N0033-03 [ICS,6]; G01N0033-02 [ICS,6,C*]; G01N0033-26 [ICS,6]; G01N0033-00 [ICS,6]; G01N0033-574 [ICS,6]; G01N0033-554 [ICS,6]; G01N0033-569 [ICS,6]; A61K0039-395 [ICS,6]; A61K0039-40 [ICS,6]; A61K0039-42 [ICS,6]; A61K0039-44 [ICS,6]
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EP 963219	ECLA	A61K031/00; A61K031/195; A61K031/255; C07C381/10
	IPCI	A61N0001-362 [ICM,7]; G01N0031-00 [ICS,7]; G01N0033-03 [ICS,7]; G01N0033-02 [ICS,7,C*]; G01N0033-26 [ICS,7]; G01N0033-00 [ICS,7]; G01N0033-574 [ICS,7]; G01N0033-554 [ICS,7]; G01N0033-569 [ICS,7]; A61K0039-395 [ICS,7]; A61K0039-40 [ICS,7]; A61K0039-42 [ICS,6]; A61K0031-00 [ICS,7]; A61K0031-255 [ICS,7]; A61K0031-21 [ICS,7,C*]; A61P0033-00 [ICS,7]; A61P0031-00 [ICS,7]; A61P0035-00 [ICS,7]; A61P0009-00 [ICS,7]

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 EP 1616564 IPCI A61K0031-00 [I,A]; A61K0031-255 [I,A]; A61K0031-21 [I,C*]; A61P0033-00 [I,A]; A61P0031-00 [I,A]; A61P0035-00 [I,A]; A61P0009-00 [I,A]
 US 6180824 IPCI C07C0061-08 [ICM,7]; C07C0061-00 [ICM,7,C*]
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 NCL 562/507.000
 US 6359004 ECLA A61K031/00; A61K031/195; A61K031/255; C07C381/10
 IPCI A61K0031-195 [ICM,7]; A61K0031-185 [ICM,7,C*]
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 IPCR A61K0031-00 [I,A]; A61K0031-00 [I,C*]; A61K0031-185 [I,C*]; A61K0031-195 [I,A]; C07C0381-00 [I,C*]; C07C0381-10 [I,A]
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 US 2003207815 ECLA A61K031/00; A61K031/195; C07C381/10
 IPCI A61K0031-17 [I,A]; A61K0031-195 [I,A]; A61K0031-185 [I,C*]
 IPCR A61K0031-00 [I,A]; A61K0031-00 [I,C*]; A61K0031-185 [I,C*]; A61K0031-195 [I,A]; C07C0381-00 [I,C*]; C07C0381-10 [I,A]
 NCL 514/019.000
 ECLA A61K031/00; A61K031/195; C07C381/10
 AB Mammals are treated for infections or for conditions associated with pathol. proliferating mammalian cellgrowth (for example, certain cancers, restenosis, benign prostatic hypertrophy) by administration of a manipulator of nitrosative stress to selectively kill or reduce the growth of the microbes or helminths causing the infection or of host cells infected with the microbes or of the pathol. proliferating mammalian cells. Novel agents include α -alkyl-S-alkyl-homocysteine sulfoximines wherein the α -alkyl contains 2-8 carbon atoms, and the S-alkyl contains 1-10 carbon atoms. In another invention herein, mammals in need of increased nitrosative stress defenses are treated, e.g. humans at risk for a stroke because of having had a transient ischemic attack are treated. Treatments to increase nitrosative stress defenses include, for example, repeated administrations of low doses of manipulators of nitrosative stress so that the subject treated has increased tolerance to nitrosative stress. In still another invention, mammals are treated for protozoal infections by systemic administration of L-buthionine-S-sulfoximine and agent that increases nitrosative stress.
 ST nitrosative oxidative stress modulator therapeutic; alkylhomocysteine

sulfoximine nitrosative stress therapeutic; ethylbuthionine sulfoximine
prepn nitrosative stress therapeutic; buthionine sulfoximine protozoal
infection

- IT Promoter (genetic element)
mRNA
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(OxyR, antisense construct to; nitrosative and oxidative stress
modulators for the treatment of disease)
- IT Thiols (organic), biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
(Uses)
(S-nitroso; nitrosative and oxidative stress modulators for the
treatment of disease)
- IT Tripeptides
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
(Uses)
(S-nitrosocysteine-containing; nitrosative and oxidative stress modulators
for the treatment of disease)
- IT Thiols (organic), biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL
(Biological study); PROC (Process)
(and mycothiols and ovothiols; nitrosative and oxidative stress
modulators for the treatment of disease)
- IT Artery
(angioplasty; nitrosative and oxidative stress modulators for the
treatment of disease)
- IT Proteins, specific or class
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(anti-nitrosative stress gene products; nitrosative and oxidative
stress modulators for the treatment of disease)
- IT Gene
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(anti-nitrosative stress; nitrosative and oxidative stress modulators
for the treatment of disease)
- IT Nucleic acids
RL: BAC (Biological activity or effector, except adverse); BSU (Biological
study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES
(Uses)
(antisense constructs; nitrosative and oxidative stress modulators for
the treatment of disease)
- IT Prostate gland
(benign hyperplasia; nitrosative and oxidative stress modulators for
the treatment of disease)
- IT Candida albicans
(candidiasis from, oral; nitrosative and oxidative stress modulators
for the treatment of disease)
- IT Antitumor agents
(carcinoma, genitourinary; nitrosative and oxidative stress modulators
for the treatment of disease)
- IT Head
Head
Neck, anatomical
Neck, anatomical
(carcinoma, inhibitors; nitrosative and oxidative stress modulators for
the treatment of disease)
- IT Biological transport
(export; nitrosative and oxidative stress modulators for the treatment
of disease)

IT Antitumor agents
Antitumor agents
(head carcinoma; nitrosative and oxidative stress modulators for the treatment of disease)

IT Mouth
Mouth
(infection; nitrosative and oxidative stress modulators for the treatment of disease)

IT Transcription, genetic
Translation, genetic
(inhibitors; nitrosative and oxidative stress modulators for the treatment of disease)

IT Gamma ray
X-ray
(irradiation; nitrosative and oxidative stress modulators for the treatment of disease)

IT Skin, disease
(lesion; nitrosative and oxidative stress modulators for the treatment of disease)

IT Antitumor agents
(lung small-cell carcinoma; nitrosative and oxidative stress modulators for the treatment of disease)

IT Antitumor agents
Antitumor agents
Antitumor agents
(melanoma, metastasis, to small bowel; nitrosative and oxidative stress modulators for the treatment of disease)

IT Antitumor agents
(melanoma; nitrosative and oxidative stress modulators for the treatment of disease).

IT Antitumor agents
Antitumor agents
(neck carcinoma; nitrosative and oxidative stress modulators for the treatment of disease)

IT Nitrosation
(nitrosating agents; nitrosative and oxidative stress modulators for the treatment of disease)

IT Alkylating agents, biological
Anthelmintics
Antibacterial agents
Antihypotensives
Antimicrobial agents
Antitumor agents
Antiviral agents
Chemotherapy
Cytotoxic agents
Drug resistance
Escherichia coli
Fungicides
Genetic vectors
Immune system
Oxidative stress, biological
Protozoacides
Psoriasis
Radiotherapy
(nitrosative and oxidative stress modulators for the treatment of disease)

IT Acids, biological studies
Chelating agents
Cytokines

Nitrates, biological studies
Nitrites
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nitrosative and oxidative stress modulators for the treatment of disease)

IT Stress, animal
Stress, microbial
(nitrosative; nitrosative and oxidative stress modulators for the treatment of disease)

IT Peptides, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nitrosylated; nitrosative and oxidative stress modulators for the treatment of disease)

IT Gene, microbial
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(oxyR; nitrosative and oxidative stress modulators for the treatment of disease)

IT Proliferation inhibition
(proliferation inhibitors; nitrosative and oxidative stress modulators for the treatment of disease)

IT Disease, animal
(proliferative, myoproliferative disorders; nitrosative and oxidative stress modulators for the treatment of disease)

IT Catalysts
(redox active metal catalysts; nitrosative and oxidative stress modulators for the treatment of disease)

IT Artery, disease
(restenosis; nitrosative and oxidative stress modulators for the treatment of disease)

IT Antitumor agents
Antitumor agents
Antitumor agents
(small intestine, metastasis, from melanoma; nitrosative and oxidative stress modulators for the treatment of disease)

IT Intestine, neoplasm
Intestine, neoplasm
Intestine, neoplasm
(small, inhibitors, metastasis, from melanoma; nitrosative and oxidative stress modulators for the treatment of disease)

IT Lung, neoplasm
(small-cell carcinoma, inhibitors; nitrosative and oxidative stress modulators for the treatment of disease)

IT Polymers, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stent coated with; nitrosative and oxidative stress modulators for the treatment of disease)

IT Medical goods
(stents; nitrosative and oxidative stress modulators for the treatment of disease)

IT Brain, disease
(stroke; nitrosative and oxidative stress modulators for the treatment of disease)

IT P-glycoproteins
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(substrates and inhibitors; nitrosative and oxidative stress modulators for the treatment of disease)

- IT Sulfites
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(sulfite-metabolizing enzymes; nitrosative and oxidative stress modulators for the treatment of disease)
- IT Enzymes, biological studies
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(sulfite-metabolizing; nitrosative and oxidative stress modulators for the treatment of disease)
- IT 51209-75-7, S-Nitrosocysteine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(and S-Nitrosocysteine-containing tripeptides; nitrosative and oxidative stress modulators for the treatment of disease)
- IT 50-18-0, Cyclophosphamide 57-22-7, Vincristine
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(combination therapy; nitrosative and oxidative stress modulators for the treatment of disease)
- IT 9054-75-5, Guanylyl cyclase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(inhibitors; nitrosative and oxidative stress modulators for the treatment of disease)
- IT 12587-47-2, β -Particle
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(irradiation; nitrosative and oxidative stress modulators for the treatment of disease)
- IT 113158-67-1D, L-Buthionine-S-sulfoximine, NO-substituted
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(nitrosative and oxidative stress modulators for the treatment of disease)
- IT **204438-84-6P**
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); **THU (Therapeutic use)**; BIOL (Biological study); PREP (Preparation); USES (Uses)
(nitrosative and oxidative stress modulators for the treatment of disease)
- IT 52-53-9D, Verapamil, NO-substituted 54-85-3D, Isoniazid, NO-substituted 127-07-1, Hydroxyurea 148-82-3, Melphalan 13292-46-1D, Rifampin, NO-substituted 23214-92-8D, Doxorubicin, NO-substituted 32467-88-2 113158-67-1, L-Buthionine-S-sulfoximine 139427-42-2 **204438-79-9** 204438-80-2 204438-81-3 204438-82-4 204438-83-5
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(nitrosative and oxidative stress modulators for the treatment of disease)
- IT 70-18-8, Glutathione, biological studies 6027-13-0, L-Homocysteine 9023-64-7, γ -Glutamylcysteine synthetase 10102-43-9, Nitric oxide, biological studies 14452-93-8, Nitrosyl ion 14797-65-0, Nitrite, biological studies 14967-78-3
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(nitrosative and oxidative stress modulators for the treatment of disease)

IT 9014-46-4, Transaldolase 11104-93-1, Nitrogen oxide, biological studies
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nitrosative and oxidative stress modulators for the treatment of
disease)

IT 109-79-5, 1-Butanethiol
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction; nitrosative and oxidative stress modulators for the
treatment of disease)

IT 9013-03-0, Nitrate reductase 9080-03-9, Nitrite reductase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(substrates; nitrosative and oxidative stress modulators for the
treatment of disease)

RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

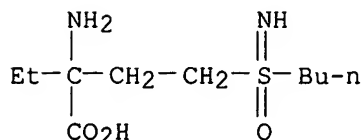
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V214(3), P949 HCAPLUS
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IT 204438-84-6P
RL: BAC (Biological activity or effector, except adverse); BSU (Biological

study, unclassified); SPN (Synthetic preparation); **THU (Therapeutic use)**; BIOL (Biological study); PREP (Preparation); USES (Uses)
(nitrosative and oxidative stress modulators for the treatment of disease)

RN 204438-84-6 HCAPLUS

CN Butanoic acid, 2-amino-4-(S-butylsulfonimidoyl)-2-ethyl- (9CI) (CA INDEX NAME)



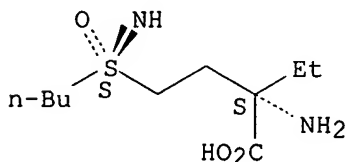
IT 204438-79-9

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); **THU (Therapeutic use)**; BIOL (Biological study); USES (Uses)
(nitrosative and oxidative stress modulators for the treatment of disease)

RN 204438-79-9 HCAPLUS

CN Butanoic acid, 2-amino-4-(S-butylsulfonimidoyl)-2-ethyl-, [S-(R*,R*)]-(9CI) (CA INDEX NAME)

Absolute stereochemistry.



L33 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1990:32528 HCAPLUS

DN 112:32528

ED Entered STN: 04 Feb. 1990

TI Inhibition of Escherichia coli **glutamine synthetase** by α - and γ -substituted phosphinothricins

AU Logusch, Eugene W.; Walker, Daniel M.; McDonald, John F.; Franz, John E.; Villafranca, Joseph J.; DiIanni, Carolyn L.; Colanduoni, John A.; Li, Bin; Schineller, Jeffrey B.

CS Monsanto Agric. Co., St. Louis, MO, 63198, USA

SO Biochemistry (1990), 29(2), 366-72

CODEN: BICHAW; ISSN: 0006-2960

DT Journal

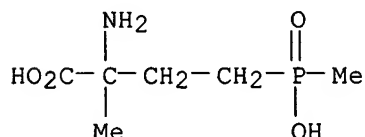
LA English

CC 7-3 (Enzymes)

AB The inhibition of E. coli **glutamine synthetase** (GS) with α - and γ -substituted analogs of phosphinothricin [L-2-amino-4-(hydroxymethylphosphinyl)butanoic acid (PPT)], a naturally occurring inhibitor of GS, was investigated. These compds. displayed inhibition of bacterial GS that was competitive vs. L-glutamate, with K_i values in the low micromolar range. At concns. greater than K_i , the phosphinothricins caused time-dependent loss of enzyme activity, whereas dilution after enzyme inactivation resulted in recovery of enzyme activity.

ATP was required for inactivation; the nonhydrolyzable ATP analog, AMP-PCP, failed to support inhibition of GS by the phosphinothricins. The binding of these inhibitors to the enzyme was also characterized by measurement of changes in protein fluorescence, which provided similar inactivation rate consts., k_1 and k_2 , for the entire series of compds. Rate consts. (k_{off}) for recovery were also determined by fluorescence measurement and were comparable for both PPT and the γ -hydroxylated analog, DL- γ -hydroxyphosphinothricin (GHPPT), and significantly greater for the α - and γ -alkyl-substituted compds. EPR spectra provided information on the interaction of the phosphinothricins with the Mn form of the enzyme in the absence of ATP, and significant binding was observed for PPT and GHPPT. ^{31}P NMR expts. confirmed that enzyme inactivation was accompanied by hydrolysis of ATP, although phosphorylated phosphinothricins could not be detected in solution. The kinetic behavior of these compds. was consistent with a mechanism involving inhibitor phosphorylation, followed by release from the active site and simultaneous hydrolysis to form phosphate and free inhibitor.

- ST **glutamine synthetase** inhibition phosphinothricin deriv
Escherichia
- IT Escherichia coli
(**glutamine synthetase** of, inhibition of, by
phosphinothricin derivs., kinetics and mechanism of)
- IT Kinetics, enzymic
(of inhibition, of **glutamine synthetase** of
Escherichia coli, by phosphinothricin derivs.)
- IT 51276-47-2, DL-Phosphinothricin 115730-43-3 119567-65-6
119617-93-5 119617-94-6 121249-46-5
RL: BIOL (Biological study)
(**glutamine synthetase** of Escherichia coli
inhibition by, kinetics and mechanism of)
- IT 9023-70-5, **Glutamine synthetase**
RL: BIOL (Biological study)
(inhibition of, of Escherichia coli, by phosphinothricin derivs.,
kinetics and mechanism of)
- IT 115730-43-3
RL: BIOL (Biological study)
(**glutamine synthetase** of Escherichia coli
inhibition by, kinetics and mechanism of)
- RN 115730-43-3 HCAPLUS
- CN Isovaline, 4-(hydroxymethylphosphinyl)-, monoammonium salt (9CI) (CA
INDEX NAME)



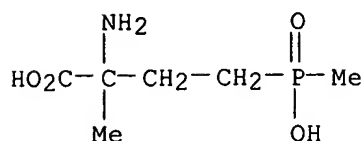
● NH_3

- IT 9023-70-5, **Glutamine synthetase**
RL: BIOL (Biological study)
(inhibition of, of Escherichia coli, by phosphinothricin derivs.,
kinetics and mechanism of)
- RN 9023-70-5 HCAPLUS
- CN Synthetase, glutamine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
AN 1989:150325 HCAPLUS
DN 110:150325
ED Entered STN: 30 Apr 1989
TI Substrate variability as a factor in enzyme inhibitor design: inhibition of ovine brain **glutamine synthetase** by α - and γ -substituted phosphinothricins
AU Logusch, Eugene W.; Walker, Daniel M.; McDonald, John F.; Franz, John E.
CS Monsanto Agric. Co., Unit Monsanto Co., St. Louis, MO, 63198, USA
SO Biochemistry (1989), 28(7), 3043-51
CODEN: BICHAW; ISSN: 0006-2960
DT Journal
LA English
CC 7-3 (Enzymes)
AB Ovine brain **glutamine synthetase** (GS) utilizes various substituted glutamic acids as substrates. This information was used to design α - and γ -substituted analogs of phosphinothricin [L-2-amino-4-(hydroxymethylphosphinyl)butanoic acid, PPT], a naturally occurring inhibitor of GS. These compds. displayed competitive inhibition of GS, and a correlation between the inhibitor K_i values and the K_m/V_{max} values of the analogously substituted glutamates supports the hypothesis that the phosphinothricins participate in transition-state analog inhibition of GS. At concns. $>K_i$, these inhibitors caused biphasic time-dependent loss of enzyme activity, with initial pseudo-1st-order behavior; k'_{inact} parameters were determined for several compds. and were similar to the $2.1 \times 10^{-2} \text{ s}^{-1}$ value measured for PPT. Dilution after GS inactivation caused a non-1st-order recovery of activity. Reactivation kinetics were insensitive to inhibitor and ADP concns. over wide ranges, although very high postdiln. concns. of inhibitor suppressed reactivation. The burst activity level, β , as well as the concentration of inhibitor required to suppress reactivation to this level, μ , expressed as a multiple of the K_i value, was characteristic for each compound in the phosphinothricin series. Increasing substitution of the phosphinothricin parent structure caused an increase in K_i values as well as in the inactivation/reactivation parameters. The kinetic behavior of these inhibitors was consistent with a mechanistic scheme involving initial phosphorylation and rapid partial inhibitor dissociation, followed by slow release of remaining bound inhibitor.
ST brain **glutamine synthetase** inhibition phosphinothricin analog
IT Brain, composition
(**glutamine synthetase** of, inhibition of, by phosphinothricin analogs)
IT Kinetics, enzymic
(of inhibition of, of **glutamine synthetase** of brain, by phosphinothricin analogs)
IT Molecular structure-biological activity relationship
(**glutamine synthetase**-inhibiting, of phosphinothricin analogs)
IT 21752-32-9 51276-47-2 115730-43-3 119567-65-6 119567-66-7
119617-93-5 119617-94-6
RL: BIOL (Biological study)
(**glutamine synthetase** of brain inhibition by, kinetics of, structure in relation to)
IT 9023-70-5, **Glutamine synthetase**
RL: PROC (Process)
(inhibition of, of brain, by phosphinothricin analogs, structure in

relation to)
 IT 115730-43-3
 RL: BIOL (Biological study)
 (glutamine synthetase of brain inhibition by,
 kinetics of, structure in relation to)
 RN 115730-43-3 HCAPLUS
 CN Isovaline, 4-(hydroxymethylphosphinyl)-, monoammonium salt (9CI) (CA
 INDEX NAME)

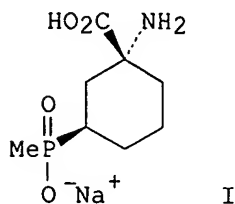


● NH₃

IT 9023-70-5, Glutamine synthetase
 RL: PROC (Process)
 (inhibition of, of brain, by phosphinothricin analogs, structure in
 relation to)
 RN 9023-70-5 HCAPLUS
 CN Synthetase, glutamine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1988:510882 HCAPLUS
 DN 109:110882
 ED Entered STN: 01 Oct 1988
 TI Synthesis of α - and γ -alkyl-substituted phosphinothricins:
 potent new inhibitors of **glutamine synthetase**
 AU Logusch, Eugene W.; Walker, Daniel M.; McDonald, John F.; Leo, Gregory C.;
 Franz, John E.
 CS Monsanto Agric. Co., St. Louis, MO, 63167, USA
 SO Journal of Organic Chemistry (1988), 53(17), 4069-74
 CODEN: JOCEAH; ISSN: 0022-3263
 DT Journal
 LA English
 CC 34-2 (Amino Acids, Peptides, and Proteins)
 Section cross-reference(s): 7, 29
 OS CASREACT 109:110882
 GI



AB Considerations of substrate structural variability for the enzyme

glutamine synthetase (GS, E.C. 6.3.1.2) have led to the design of α - and γ -substituted analogs of the naturally occurring GS inhibitor phosphinothricin (PPT). The novel cyclic inhibitor DL-cyclohexanephosphinothricin (I) was prepared via conjugate addition of MeP(OEt)₂ to 2-cyclohexenone, followed by stereospecific Bucherer-Bergs amino acid synthesis. The stereochem. of I was determined by 2-dimensional NMR techniques. The substitute phosphinothricins function as active site probes useful for elucidating the mechanism of GS inhibition by PPT.

ST cyclohexanephosphinothricin prepn **glutamine synthetase**
inhibitor; phosphinothricin analog prepn **glutamine synthetase** inhibitor; Bucherer Bergs phosphinocyclohexanone

IT 586-75-4, p-Bromobenzoyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(amidation of, with amino(phosphono)cyclohexanecarboxylate)

IT 9023-70-5, **Glutamine synthetase**
RL: PROC (Process)
(inhibition of, with phosphinothricin analogs)

IT 115651-56-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and acylation of, with bromobenzoyl chloride)

IT 73870-64-1P 86605-52-9P 115651-42-8P 115651-51-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclocondensation reaction of, with ammonium carbonate and potassium cyanide)

IT 115651-53-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and esterification of, with diazomethane)

IT 35597-44-5DP, Phosphinothricin, analogs **115651-45-1P**
115651-49-5P 115651-54-2P **115730-43-3P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and **glutamine synthetase**-inhibiting activity of)

IT 86605-51-8P 115651-40-6P 115651-41-7P 115651-50-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

IT 86605-54-1P 115651-43-9P 115651-44-0P 115651-52-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and saponification of, with barium hydroxide)

IT 115651-46-2P 115651-47-3P 115651-48-4P 115651-55-3P 115651-57-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 78-94-4, Methyl vinyl ketone, reactions 930-68-7, 2-Cyclohexenone
1629-58-9, Ethyl vinyl ketone 4170-30-3, Croton aldehyde 16205-98-4
115651-58-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with di-Et Me phosphinate)

IT 15715-41-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, with unsatd. aldehydes and ketones)

IT 9023-70-5, **Glutamine synthetase**
RL: PROC (Process)
(inhibition of, with phosphinothricin analogs)

RN 9023-70-5 HCAPLUS

CN Synthetase, glutamine (9CI) (CA INDEX NAME)

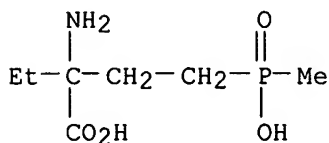
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IT 115651-45-1P 115730-43-3P

RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and glutamine synthetase-inhibiting
activity of)

RN 115651-45-1 HCAPLUS

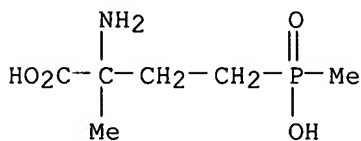
CN Butanoic acid, 2-amino-2-ethyl-4-(hydroxymethylphosphinyl)-, monosodium
salt (9CI) (CA INDEX NAME)



● Na

RN 115730-43-3 HCAPLUS

CN Isovaline, 4-(hydroxymethylphosphinyl)-, monoammonium salt (9CI) (CA
INDEX NAME)



● NH₃

L33 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1988:132274 HCAPLUS

DN 108:132274

ED Entered STN: 15 Apr 1988

TI Amino acid sulfoximines: α-ethylmethionine sulfoximine

AU Griffith, Owen W.

CS Med. Coll., Cornell Univ., New York, NY, 10021, USA

SO Methods in Enzymology (1987), 143(Sulfur Sulfur Amino Acids),
286-91

CODEN: MENZAU; ISSN: 0076-6879

DT Journal

LA English

CC 34-2 (Amino Acids, Peptides, and Proteins)

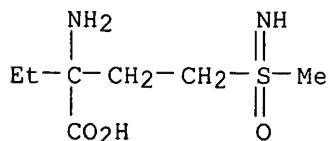
AB α-Ethylmethionine sulfoxime, HO₂CCEt(NH₂)CH₂CH₂S(O)Me:NH, was prepared
by treatment of HO₂CCEt(NH₂)CH₂CH₂SMe (I) with HCl. I was prepared by
treatment of EtCOCH:CH₂ with MeSH to give EtCOCH₂CH₂SMe which was
converted to a hydantoin derivative with (NH₄)₂CO₃ and NaCN and the product
hydrolyzed to I.

ST ethylmethionine sulfoximine

IT 66735-70-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)

(preparation and hydrolysis of)
 IT 66735-71-5P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (preparation and reaction with hydrazoic acid)
 IT 66735-68-0P 113350-10-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 IT 66735-69-1P, Ethyl 2-(methylthio)ethyl ketone
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of and hydantoin derivative preparation from)
 IT 74-93-1, Methanethiol, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with Et vinyl ketone)
 IT 7782-79-8, Hydrazoic acid
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with ethylmethionine)
 IT 1629-58-9, Ethyl vinyl ketone
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with methanethiol)
 IT 66735-68-0P
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (preparation of)
 RN 66735-68-0 HCAPLUS
 CN Butanoic acid, 2-amino-2-ethyl-4-(S-methylsulfonimidoyl)- (9CI) (CA INDEX
 NAME)



L33 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN
 AN 1981:457044 HCAPLUS
 DN 95:57044
 ED Entered STN: 12 May 1984
 TI Inhibition of rat liver **glutamine synthetase** by
 phosphonic analogs of glutamic acid
 AU Lejczak, B.; Starzemska, H.; Mastalerz, P.
 CS Inst. Org. Phys. Chem., Tech. Univ., Wroclaw, PL-50370, Pol.
 SO Experientia (1981), 37(5), 461-2
 CODEN: EXPEAM; ISSN: 0014-4754
 DT Journal
 LA English
 CC 7-3 (Enzymes)
 AB Analogs of glutamic acid, α -methylglutamic acid, and glutamine in
 which the α - or γ -COOH groups are replaced by PO₃H₂ or
 P(O)(OH)₃ groups competitively inhibit rat liver **glutamine
 synthetase**. The K_i values are comparable to or lower than K_m for
 L-glutamate.
 ST **glutamine synthetase** inhibition glutamate analog;
 phosphonate analog glutamate **glutamine synthetase**
 inhibition
 IT Liver, composition
 (glutamine synthetase of, phosphoric analogs of
 glutamate inhibition of)

IT Michaelis constant
(of **glutamine synthetase**)

IT Kinetics, enzymic
(of inhibition, of **glutamine synthetase**)

IT Molecular structure-biological activity relationship
(**glutamine synthetase**-inhibiting, of glutamate
phosphonic analogs)

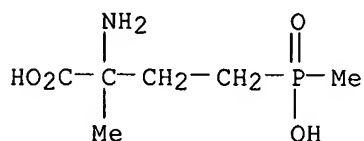
IT 56-85-9D, phosphonic analogs 56-86-0D, phosphonic analogs 6323-99-5
18865-31-1 51276-47-2 **65482-86-2** 73870-68-5 73870-69-6
78405-44-4 78405-48-8 78432-42-5 81746-56-7 115692-97-2
153605-27-7
RL: BIOL (Biological study)
(**glutamine synthetase** inhibition by)

IT **9023-70-5**
RL: PROC (Process)
(inhibition of, by phosphonic analogs of glutamic acid)

IT **65482-86-2 78405-44-4**
RL: BIOL (Biological study)
(**glutamine synthetase** inhibition by)

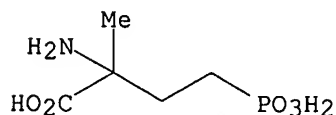
RN 65482-86-2 HCAPLUS

CN Isovaline, 4-(hydroxymethylphosphinyl)- (9CI) (CA INDEX NAME)



RN 78405-44-4 HCAPLUS

CN Isovaline, 4-phosphono- (9CI) (CA INDEX NAME)



IT **9023-70-5**
RL: PROC (Process)
(inhibition of, by phosphonic analogs of glutamic acid)

RN 9023-70-5 HCAPLUS

CN Synthetase, glutamine (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L33 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1979:198299 HCAPLUS

DN 90:198299

ED Entered STN: 12 May 1984

TI Inhibition of glutathione biosynthesis by prothionine sulfoximine
(S-n-propyl homocysteine sulfoximine), a selective inhibitor of
 γ -glutamylcysteine synthetase

AU **Griffith, Owen W.**; Anderson, Mary E.; Meister, Alton

CS Med. Coll., Cornell Univ., New York, NY, USA

SO Journal of Biological Chemistry (1979), 254(4), 1205-10

CODEN: JBCHA3; ISSN: 0021-9258

DT Journal

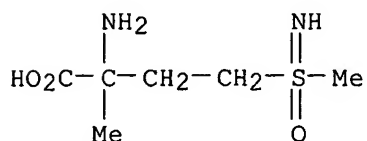
LA English
 CC 3-5 (Biochemical Interactions)
 Section cross-reference(s): 7
 AB DL-Prothionine SR-sulfoximine [70085-86-8] and α -methyl-DL-prothionine-SR-sulfoximine [70056-05-2] were prepared and found to markedly inhibit γ -glutamylcysteine synthetase [9023-64-7] but to not significantly affect glutamine synthetase [9023-70-5]. After injection of prothionine sulfoximine into mice, the level of kidney glutathione [70-18-8] decreased rapidly to .apprx.20% of the control level indicating that a large fraction, rather than a small pool, of glutathione participates in rapid turnover. The rapid decline of the glutathione level that occurs after inhibition of glutathione synthesis reflects the normal rate of intracellular glutathione utilization by the γ -glutamyl cycle. A number of related sulfoximines were synthesized and tested as inhibitors of glutamine and γ -glutamylcysteine synthetases.
 ST glutathione formation prothionine sulfoximine; glutamylcysteine synthetase prothionine sulfoximine
 IT Kidney, metabolism (glutathione formation by, prothionine sulfoximine inhibition of)
 IT Molecular structure-biological activity relationship (glutamylcysteine synthetase-inhibiting, of prothionine sulfoximine analogs)
 IT 70-18-8, biological studies
 RL: FORM (Formation, nonpreparative) (formation of, by kidney, methionine sulfoximine inhibition of)
 IT 15985-39-4 66735-67-9 66735-68-0
 RL: PRP (Properties) (glutamylcysteine synthetase inhibition by)
 IT 9023-64-7
 RL: PROC (Process) (methionine sulfoximine inhibition of)
 IT 15985-39-4P 70056-00-7P 70056-01-8P 70056-02-9P 70056-03-0P 70056-05-2P 70085-86-8P 70085-87-9P
 RL: PREP (Preparation) (preparation and glutamylcysteine synthetase-inhibiting activity of)
 IT 44768-66-3P
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation and hydantoinylation of)
 IT 70085-85-7P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reaction) (Reactant or reagent) (preparation and saponification of)
 IT 557-02-8P 2598-46-1P 2749-07-7P 16820-52-3P 16820-66-9P 42537-72-4P 70056-04-1P 70056-06-3P 70095-14-6P
 RL: PREP (Preparation) (preparation of)
 IT 9023-70-5
 RL: PRP (Properties) (prothionine sulfoximine inhibition of glutamylcysteine synthetase in relation to)
 IT 107-03-9
 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with acrolein)
 IT 107-02-8, biological studies
 RL: RCT (Reactant); RACT (Reactant or reagent) (reaction of, with propanethiol)
 IT 14109-74-1
 RL: RCT (Reactant); RACT (Reactant or reagent) (reductive amination of)

IT 66735-67-9 66735-68-0

RL: PRP (Properties)
(glutamylcysteine synthetase inhibition by)

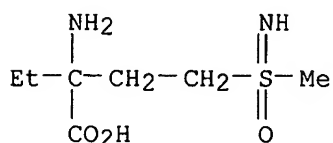
RN 66735-67-9 HCAPLUS

CN Isovaline, 4-(S-methylsulfonimidoyl)- (9CI) (CA INDEX NAME)



RN 66735-68-0 HCAPLUS

CN Butanoic acid, 2-amino-2-ethyl-4-(S-methylsulfonimidoyl)- (9CI) (CA INDEX NAME)

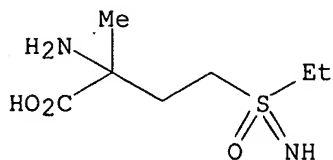


IT 70056-03-0P 70056-05-2P

RL: PREP (Preparation)
(preparation and glutamylcysteine synthetase-inhibiting activity of)

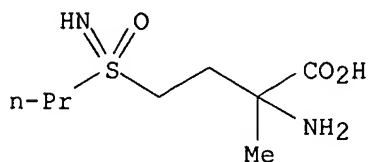
RN 70056-03-0 HCAPLUS

CN Isovaline, 4-(S-ethylsulfonimidoyl)- (9CI) (CA INDEX NAME)



RN 70056-05-2 HCAPLUS

CN Isovaline, 4-(S-propylsulfonimidoyl)- (9CI) (CA INDEX NAME)



IT 9023-70-5

RL: PRP (Properties)
(prothionine sulfoximine inhibition of glutamylcysteine synthetase in relation to)

RN 9023-70-5 HCAPLUS

CN Synthetase, glutamine (9CI) (CA INDEX NAME)